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IS THE PIN-TAILED WHYDAH *Vidua macroura* A BROOD-PARASITE OF THE BLACK-FACED GRASSQUIT *Tiaris bicolor* ON PUERTO RICO?

by Robin Restall

Summary

Several species of African weaverbirds (Ploceidae) and waxbills (Estrildidae) have become established on the Caribbean island of Puerto Rico. One of these, the Pin-tailed Whydah *Vidua macroura*, is a brood parasite whose African host species are common waxbills of the genus *Estrilda*. It is also known to occasionally use other estrildid finches and is reported as using species from other families as hosts (see e.g. Friedmann, 1960). A formal agricultural report that listed the exotic species established on Puerto Rico, included a list of species used as hosts by the Pin-tailed Whydah (Camacho Rodriguez et al. 1999). The list included the native Black-faced Grassquit *Tiaris bicolor*. This appeared to confirm anecdotal but unconfirmed reports from local birders. Despite the apparent similarities between the Neotropical grassquits and the estrildid finches of the Old World tropics, it is not logical and ought not to be possible for the Pin-tailed Whydah to successfully brood-parasitize the grassquits. Jürgen Nicolai (1964) in a seminal paper on the subject stated baldly that it is, "impossible for (a viduine) to parasitize other bird groups." The present paper deals with the avicultural techniques and resources used by the author to test the hypothesis of the Pin-tailed Whydah using a Neotropical non-estrildid species as host, together with the conclusions.

Introduction

The Pin-tailed Whydah is the commonest and best known of the parasitic weaverbirds. It occurs across most of Africa south of the Sahara in grassland and almost any other habitat where grasses are growing. It is about the size of a grassquit or *Sporophila* seedeater, with the adult male in nuptial plumage being easily recognised by his black-and-white plumage, sealing wax-red bill and long trailing rectrices (up to 20cm (7¾in) in length). The female

and male in non-breeding plumage are buffy-brownish with black lines along the head and blackish striations on the upperparts, but the juvenile's plumage is not striated, and is rather similar to that of an estrildid finch. During the breeding season in Africa the Pin-tailed Whydah is usually found in small groups that consist of a dominant, constantly singing and displaying adult male in full nuptial plumage, together with several birds that may be juveniles, immatures, females, and males is delayed plumage maturation. Outside the breeding season, flocks are larger and may contain several adult males in various stages of plumage development. On Puerto Rico it seems that the population level is too small for groups of significant size to assemble - undoubtedly a reflection of the population densities of the waxbills. The Pin-tailed Whydah is a tame bird that shows little fear or apprehension in the vicinity of man and may even be seen foraging on garden lawns (Rafy Rodriguez pers. comm; pers. obs.).

The female Pin-tailed Whydah lays a single white egg in the host species' nest, and this can be identified by its slightly larger size. The host estrildid usually raises the nestling alongside its own young without any problems. Once fledged and weaned to independence, the young whydah leaves the company of the estrildids to join the company of the whydahs. The female whydah apparently ovulates upon watching the selected host species nest building. She is stimulated by the song and display of the male estrildid (Friedmann, 1960; Restall, 1975), but mates with the dominant male of a whydah group in response to that bird's song and display.

The Pin-tailed Whydah's commonest host species across its range in Africa is the Common Waxbill *Estrilda astrild*. Unlike other parasitic whydahs, it also often lays in the nests of other *Estrild* waxbills. It appears that other species are chosen mostly in response a scarcity or absence of the Common Waxbill (MacDonald, 1980; Mines, 1989; Payne 2005; Schuetz, 2005). Those whose nestlings have palate markings most similar to those of the Common Waxbill nestling are the preferred substitutes. The Black-rumped Waxbill *E. troglodytes*, Orange-cheeked Waxbill *E. melpoda*, Crimson-rumped Waxbill *E. rhodopyga*, Fawn-breasted Waxbill *E. paludicola*, Sweet Waxbill *E. melanotis*, Red-billed Firefinch *Lagonosticta senegala* and Bronze Mannikin *Lonchura cucullata* are most commonly listed as hosts in Africa (Roberts, 1984; Borrow & Demey, 2001; Stevenson & Fanshawe, 2002; Redman et al. 2009). The percentage of non-*Estrild* hosts is extremely small compared to that of *Estrild* waxbill hosts. Species from other families have occasionally been recorded as hosts, and there is little doubt that the female whydah can be quite catholic and opportunistic in her choice of host, even occasionally indiscriminate, but it is extremely doubtful that any of these apparent non-estrildid hosts ever succeeded in

hatching and rearing a whydah chick.

The use of various host species is consonant with the songs of the male. Other parasitic whydahs are usually host-specific and the song of the male whydah contains elements of the song of the host species. This has proved very helpful to field workers in the past when host species have been identified by analysis of the song of the whydah in question (Payne, 2005). In the case of the Pin-tailed Whydah, however, the song is not like that of any particular waxbill, and the female responds to the song of several different waxbills (Nicolai, 1964). "The species associations of *Vidua* and estrildid hosts result from histories of host shifts by the *Vidua*," wrote Payne (2005). This suggests to me that the Pin-tailed Whydah has an above expectation built-in propensity to use alternative species, a supposition supported by the lack of host species song mimicry.

Of the known estrildid host species, the Black-rumped and Orange-cheeked Waxbills, Bronze Mannikin, Tri-coloured Munia *L. malacca* and Nutmeg Finch or Spice Bird *L. punctulata* vary from common to uncommon on Puerto Rico (Raffaele, 1989). No fewer than nine estrildids are established on the island, of which six are established in the locality where the Pin-tailed Whydah is commonest. It is likely that the two *Estrild* waxbills are favoured, but it is quite possible that all may be used as host species, including the munias *L. malacca* and *L. punctulata* (Rafy Rodriguez pers. comm.).

There are two species of grassquit commonly found on Puerto Rico, the Black-faced Grassquit *T. bicolor* and the Yellow-faced Grassquit *T. olivacea*. The former is widespread and commonly found in scrub, loose open woodland and in gardens - even trespassing into open kitchens to forage on the floor for fallen crumbs. The Yellow-faced Grassquit is less widely distributed on the island. Both species are common in the area where the Pin-tailed Whydah is found. In other parts of the Yellow-faced Grassquit's range in Central and northern South America, it can be as common and confiding as the Black-faced Grassquit.

Hypothesis

The hypothesis is that for a chosen host species to successfully hatch the eggs of and rear the nestlings and fledglings of the brood-parasite species, it must have similar breeding behaviour to those host species known to be continually and habitually successful. The *Estrild* waxbills obviously fit that description, and the mannikin squeezes in. Superficially, the *Tiaris* grassquits also appear to fit the bill - they forage and feed in a similar manner to the estrildid finches in the same habitat and I have seen them foraging together in the south-western part of the island. They build a covered nest and lay two or three eggs and go on to rear the young on a similar diet to that of the waxbills. If the report is accurate, it implies that a grassquit can incubate,

hatch and raise whydah chicks and, therefore, it must be equally possible that it could brood, hatch and raise estrildid chicks. So placing estrildid eggs (as legitimate substitutes for whydah eggs) and/or nestlings (as legitimate substitutes for whydah nestlings) under breeding grassquits would be a valid test. In addition, placing estrildid Bengalese eggs under a canary would provide a distinct additional dimension to the experiment.

Methods

From personal experience of studying grassquits in the field on Puerto Rico and similar projects elsewhere, I knew that an investigation which required detailed and prolonged observations of both the Pin-tailed Whydah and the various host species in the field would have required time and resources not available to me. However, combining some 60 years of experience with estrildid finches and 15 years with grassquits, both in the field and in captivity, with the full avicultural resources at my disposal, allowed this hypothesis to be constructed and tested. The purpose of the experiment was to introduce eggs and/or estrildid nestlings into the nest of a breeding pair of grassquits to see whether they would be accepted and, if so, whether the nestlings would be reared successfully.

I had successfully bred the Black-faced Grassquit several times in the garden aviary adjoining my birdroom laboratory, and the species is common in my garden and the neighbourhood. I therefore established a breeding pair of grassquits in the aviary and another in a Terenzani breeding cage measuring 1m x 0.5m x 0.5m (approx. 3ft 3in x 1ft 7 $\frac{3}{4}$ in x 1ft 7 $\frac{3}{4}$ in). To represent the estrildid/viduine group I used pairs of Bengalese, the domesticated descendant of *L. striata swinhoi* (Restall, 1996), which were also placed in Terenzani breeding cages. I also had a free-breeding pair of small canaries, the Timbrado breed, which is similar to the Roller canary in Europe, and is normally used to supply the pet trade here in Venezuela. I included these as a control.

During the following year (in the rainy season, when local finches and others breed), I was able to place a fertile egg of the estrildid Bengalese in the nest of the grassquits in the aviary (those in the cage failed to breed). On another occasion I was able to exchange newly-hatched grassquits with newly-hatched estrildines. As a control I placed Bengalese eggs in the canary nest.

I was able to find an active grassquit nest in the neighbourhood and as soon as both of the eggs had hatched, was able to take the nestlings and replace them with two recently hatched Bengalese.

Results

The canary incubated and hatched the Bengalese eggs, but failed to rear the nestlings past the second day. The Bengalese incubated and hatched

the first clutch of grassquit eggs, but also failed to rear the nestlings past the second day. The grassquits in the aviary deserted their nest when the Bengalese egg was added. The local grassquits in the park deserted their nest and I found the Bengalese nestling dead and overrun with ants. The Bengalese deserted the nest in which I had replaced their own young with grassquit nestlings. It was not possible to tell whether the desertion caused the death of the grassquit nestlings, or if it was their death that caused the Bengalese to desert. Desertion of any nest by Bengalese is rare. Like Zebra Finches *Taeniopygia castanotis*, they are quite likely to simply add some nest material on top of the dead nestlings and lay a fresh clutch of eggs.

The Bengalese when left alone subsequently raised a healthy and strong brood of four young. The grassquits in the aviary eventually built a new nest and raised both chicks from a second clutch of two eggs.

Discussion

The adult birds used in the experiment were healthy and subsequently bred perfectly normally. During the experiment though, it was painfully apparent that they were unable to feed the other birds' nestlings. I sat and watched the canary feed herself and then go to the nest, looking in on the Bengalese nestlings and even making head movements that led me to think that the chicks were being fed, but on examining them later I found that she had not fed them.

A characteristic of estrildid waxbills is that the nestlings have a contorted sideways twist to the neck when begging for food. The more hungry the nestling, the more it contorts and twists its head, shows its palate and increasingly moves its tongue from side to side. Freshly-hatched estrildids beg like other small passerines, but soon begin the neck-twisting behaviour, apparently on the second day in the case of *Estrild* waxbills (although the Zebra Finch does not begin to do so until the fourth or fifth day (Zann, 1996) and the Cut-throat Finch *Amadina fasciata* does not develop the behaviour at all (Goodwin, 1982)). The neck-twisting is most easily seen when fledgling Zebra Finches beg for food from their parents.

No doubt this eccentric behaviour is an adaptation enabling the brood of nestlings to obtain food from the attendant parent within the confines of the small, enclosed nest. The adult enters from the side of the speroid and stands in a horizontal position and the nestlings twist around in order to present their gape in the most inviting position possible. In contrast, it is a characteristic of nestlings hatched in open, cup-shaped nests, to reach directly upwards, the strongest or hungriest nestling reaching the furthest and getting first attention from the food-bearing parent. In the case of estrildid nestlings it seems that the hungriest bird - the one with the widest gape showing the most palate markings - is the attention-claiming equivalent of

the upward-reaching nestling.

Tiaris grassquits make a covered nest that superficially resembles an estrildid nest and it would be easy to assume that the nestlings beg in a similar manner to estrildid nestlings. However, this illusion was shattered by a photo Rafy Rodriguez sent me showing a female Puerto Rican Black-faced Grassquit standing at the entrance of her nest and feeding a clutch of hungry nestlings. The entrance was actually a loose and fairly large opening, almost as so a slice had been cut at an angle from the upper front of the spheroid, rather than having a porch, tunnel-like opening at the side, typical of the waxbills. Furthermore, the grassquit nestlings were at the front edge of the opening and begging directly upwards, just like nestlings in an open, cup-shaped nest. The forward edge of the roof of the nest was above and slightly behind the heads of the gaping nestlings. A careful examination of the design of several Black-faced Grassquit nests in the vicinity of my home showed that the nest in the photo was a typical example of a nest built by this species.

Much has been written about the role of the luminous spots and globules in and at the gape edges of estrildid nestlings, and that every species has its own specific pattern of markings. The palate markings of the waxbills in the genus *Estrilda* are usually similar, with the palate markings of the Pin-tailed Whydah mimicking those the Common Waxbill perfectly. The palate markings of the two common *Estrilda* waxbills on Puerto Rico, the Black-rumped and the Orange-cheeked species, are similar to those of the Common Waxbill. The whydah nestlings behave just like estrildid nestlings, complete with twisting begging motions, as can be seen from newly-fledged whydahs twist-begging from their waxbill foster parents. It is interesting that the palate markings of the Bronze Mannikin are different from those of the waxbills. It has a horseshoe-shaped bar instead of five spots and it is significant that this species is only occasionally used as a host in its native Africa (22 times out of 79 parasitized nests in one field study (Mines, 1989)). The palate markings of the Tri-coloured Munia are different yet again and, in simple design terms, are possibly midway between those of the Bronze Mannikin and the Common Waxbill.

Tiaris grassquits do not possess palate markings, neither is the gape luminous, there is no need for it to be, as the nestlings gape in clear, open light, whereas the estrildid and viduine nestlings do so in darkened, enclosed nests. The palate and gape flanges of the grassquit nestling are a uniform pale creamy colour.

The main function of the palate markings is to signal to the parent, "feed me", and the hungrier the nestling, the more it will contort, open the gape wider and increasingly move the tongue from side to side. It follows that

in a comparative situation, when a food-carrying parent is confronted with two kinds of gaping palates, it will respond to the gape that it is genetically conditioned to respond to.

What about reports that the whydah has been seen entering and laying in the nests of grassquits? Jack Clinton Eitniear and Lucie Salwiczek have both mentioned this (pers. comm.) and the late Ian Hinze also raised this matter when we last met. All three commented on the disputes that such reports provoke. It seems that my experience of the grassquit deserting the nest after a Bengalese egg was added to the clutch is probably typical of what occurs in the wild. Nests of Black-faced Grassquit have indeed been found with a whydah egg amongst the grassquit's eggs, but these nests had either already been deserted or were subsequently deserted. Furthermore, individual fledgling whydahs have been seen with fledgling waxbills following adult waxbills, but have never been seen with fledgling grassquits attended by their parents (Raul Perez-Rivera pers. comm.).

Conclusion

The apparent inability of a *Tiaris* grassquit to accept and feed nestling estrildids argues strongly that any attempt by the Pin-tailed Whydah to brood-parasitize the Black-faced Grassquit would be doomed to failure. As a concomitant reciprocal, were it possible for a grassquit to rear an estrildid nestling, then it would be possible for an estrildid to rear a grassquit nestling. In this trial, the estrildid finch was the Bengalese. This domesticated form has been bred for centuries in China, with particular emphasis on its unquestioning willingness to foster more delicate and colourful waxbills. The Japanese long ago used Bengalese to virtually "factory breed" Gouldian Finches *Erythrura gouldiae*. (The newer variants of the Bengalese developed in recent decades in Europe by crossing the Bengalese with the Black Munia *L. stygia* (which have not yet reached Venezuela) are far less efficient as foster parents.) Field experiments with parasitized waxbills in Africa have shown that the hosts will usually accept nestlings with different gape patterns (Schuetz, 2005), inviting the inference that closely related *Estrilds* will show a similar degree of tolerance. Various instances of fostering among different *Lonchura* species reported in the cage bird and aviculture literature over the years and, personal experience, suggest a greater foster-flexibility on the part of munias, with the Bengalese the most open-hearted foster mother of them all. This super-foster ability loaded the dice in favour of the Bengalese succeeding, but proved to no avail, as they apparently failed to cope with the directly upward-reaching begging behaviour of the grassquit nestlings.

In the report that prompted this study, the Yellow-faced Grassquit was not listed as a host species of the whydah, but as its breeding behaviour is virtually identical to that of its congener, it is equally valid, or invalid, as the

Black-faced Grassquit, as a possible host for the Pin-tailed Whydah.

There are clearly two questions that require answers:

1. Why would a grassquit not accept the egg of, nor rear a nestling of a viduine/estrildine?
2. Why would an estrildid not rear a grassquit nestling?

It is the first question that should be answered as unequivocally as possible.

a. The egg of the whydah is white, whereas the eggs of the grassquit are pastel greenish-grey, speckled lightly with various browns and greys, which tend to be denser at the rounded end; the whydah egg is also larger. The cavity of the grassquit nest is open to the light, even when a bird is standing in the entrance, so that the contrasting usurper egg would be noticed immediately. In the dark interior of an estrildid nest, the only noticeable difference is the larger size of the whydah egg, and that is apparently not enough to prompt rejection. Grassquits commonly lay two eggs, or more rarely, three eggs. Waxbills lay four to six eggs, therefore an additional egg is less noticeable.

b. Neotropical small passerines generally have shorter incubation periods and the two, or occasionally three young, fledge earlier than those of small passerines in the Old World tropics. This is an adaption to deal with the fact that food is less abundant (Skutch, 1949) and nests are more heavily predated. Estrildid finches have clutches of four to six eggs and nestling periods of up to three weeks. This means that the natural advantage that all "cuckoos" have of being slightly larger, with more voracious appetites and fledging slightly earlier than their host species' nestlings, is invalid. Waxbills begin incubation after the third egg has been laid, whereas grassquits begin incubation after the second egg has been laid which means that, on average, compared to an *Estrilda-Vidua* combination, the *Tiaris* eggs would commence incubation a day earlier, further reducing the whydah's advantage.

c. The parent grassquit is adapted to face its nestlings as they reach directly upwards, with their wide open, unmarked pale gapes, being the stimulus for it to regurgitate food into the maw; the behaviour in effect saying, "I'm hungry, feed me." If, alongside the (usually) two "normal", upward-reaching nestlings, there was another nestling, perhaps a little larger and begging more strongly, but with a strangely spotted and coloured gape, twisting around, with a wagging tongue and, lower in the nest than the grassquit nestlings, then it would be quite remarkable were that nestling to be fed.

d. A further factor arising from the point I just made about differences between small passerines of the Old World tropics and those of the Neotropics, is that the latter seem to be far more sensitive and responsive to nest invasion and desert more readily. Laying small clutches means they can begin a second or third nest with far less effort than a waxbill that has built a complex nest and laid five eggs.

e. An important difference between estrildid and viduine nestling begging behaviour and that of other passerine nestlings, is that estrildid and viduine nestlings do not swallow the food brought to the nest - the parents thrust it deep into the open maw. I witnessed the sheer puzzlement of the canary as she was poised to feed the Bengalese nestling, for it was almost impossible for her to delicately place the food she had regurgitated into the twisting, wagging gape, and she left without trying. Her own chicks would have quickly swallowed the morsel and then begged for more. In contrast, an estrildid nestling that had a morsel of food placed in its open gape could, because of the wagging of the tongue and the movement of the head, easily shake it out. From observations of the *Volatinia* grassquit and *Sporophila* seedeaters feeding nestlings, the food-placing movements are very quick and light, and I am sure those of the Black-faced Grassquit are the same. It is therefore virtually certain that the faster, lighter and more delicate feeding technique of these "normal" passerine species is inadequate to sustain an African estrildid or viduine nestling adapted to having food pumped down its throat.

Nicolai (1964) suggested that the feeding method used by estrildids requires a specialised adaptive breathing technique. Parent estrildids place their bills deeper into the maw of the nestling and pump up more food at a time. In contrast, a canary is a delicate and light feeder. He pointed out that there have been many attempts to rear carduelid finches (e.g. the Red Siskin *Carduelis cucullata*) under estrildids (the Zebra Finch can be just as efficient at fostering as the Bengalese and was often used in such experiments) but these have always failed because the nestlings are choked. This reverse of the grassquit-feeding-estrildid produces exactly the same result.

When considering reports of non-estrildid species being used as hosts by the whydah, it is important to recognise that the act of laying an egg in a nest, does not necessarily mean that the egg will be accepted by the owners of the nest, let alone incubated successfully and the chick fed and raised to independence. In the absence of confirmed evidence of successful acceptance, brooding and rearing, the appearance of an alien egg in any nest is simply that, and no more. One final point: I have elaborated on several factors that could militate against a grassquit successfully rearing a *Vidua* nestling, because the sample of birds used in this experiment was too small to

be statistically valid. However, I am convinced that the collective evidence summarized here shows that the successful use of the Black-faced Grassquit as a host by the Pin-tailed Whydah on Puerto Rico is, effectively, impossible. This fully supports Nicolai's original statement.

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References

- Borrow, N. and Demey, R. 2001. *Birds of Western Africa*. Helm, London.
- Camacho Rodríguez, M., J. Chabert Llompart y M. Lopez. 1999. *Guía para la Identificación de las Aves Exóticas en Puerto Rico*. D.R.N.A., Division de Recursos Terrestres. San Juan, Puerto Rico.
- Friedmann, H. 1960. The Parasitic Weaverbirds. *Bull.* 223, Smithsonian Institution. United States National Museum, Washington, D.C.
- Goodwin, D. 1982. *Estrildid Finches of the World*. British Museum (Natural History).
- MacLean, G. L. 1985. *Roberts' Birds of Southern Africa*. John Voelcker Bird Book Fund, Cape Town.
- MacDonald, M. A. 1980. Observations on Wilson's Widowfinch and the Pintailed Whydah in southern Ghana, with notes on their hosts. *Ostrich* 51:21-24.
- Mines, B. M. 1999. Hosts of the Pintailed Whydah (*Vidua macroura*) in southern Africa. *Avian Demography Unit: Bird Numbers* 8(1) Article 06.
- Nicolai, J. 1964. Der Brutparasitismus der Viduinae als ethologisches problem. *Zeitschrift für Tierpsychologie* 21,2:129-204.
- Payne, R. B. 2005. *Nestling mouth markings and colours of Old World finches Estrildidae: mimicry and coevolution of nesting finches and their Vidua brood parasites*. Misc. Pub. No.194. Museum of Zoology, University of Michigan.
- Raffaele, H. A. 1989. *Birds of Puerto Rico and the Virgin Islands*. Princeton University Press.
- Redman, N., Stevenson, T. and Fanshawe, J. 2009. *Birds of the Horn of Africa*. Helm, London.
- Restall, R. 1975. *Finches and other seed-eating birds*. Faber & Faber, London.
- Restall, R. 1996. *Munias and Mannikins*. Pica Press, London.
- Schuetz, J. G. 2005. Reduced growth but not survival of chicks with altered gape patterns: implications for the evolution of nestling similarity in a parasitic finch. *Animal Behaviour* 70:839-848.
- Skutch, A. F. 1949. Do tropical birds rear as many young as they can nourish? *Ibis* 91:430-455.
- Stevenson, T. and Fanshawe, J. 2002. *Birds of East Africa*. T & A D Poyser, London.
- Zann, R. 1996. *The Zebra Finch. A synthesis of Field and Laboratory Studies*. Oxford University Press.

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BREEDING THE MOUSTACHED LAUGHINGTHRUSH *Ianthocincla cineracea* AT WADDESDON MANOR

by Simon Matthews

The Moustached Laughingthrush, also known sometimes as the Ashy or Black-capped Laughingthrush, is one of seven species of laughingthrushes housed at Waddesdon Manor, near Aylesbury, Buckinghamshire. The Moustached Laughingthrush was formerly grouped along with a number of other babblers in the genus *Garrulax*, which has now been split into 11 genera. The genus *Ianthocincla* contains eight species. These can be characterised as having white or pale tips on at least the secondary and tertial feathers, strong colours on the wings and a cap-like effect on the head.

The Moustached Laughingthrush is a medium-sized species measuring 21cm-24cm (approx. 8¼in-9½in) from head to tail and weighing 43g-55g. It is sandy brown in colour, with a black cap, moustache and wing-tips. Its underparts are a buffy grey-brown, there are large grey panels on the wings and the tail is mainly grey-brown, with black subterminal markings and white tips to the feathers (see photo p.60). This laughingthrush has a loud call but is not as vocal as some of the other laughingthrushes. It produces a high-pitched “pr’r’r’r’ip”, which is repeated quickly and sometimes contains hard, chuckling, disjointed notes.

There are currently three recognised subspecies: *I. c. cineracea* in north-east India and western Burma (Myanmar); *I. c. strenua* in north-east Burma (Myanmar) and south China; and *I. c. cinereiceps* in central and eastern China. They inhabit a range of different habitats, including scrubland on the edge of broadleaf forest, mixed broadleaf coniferous forest, disused agricultural land, bamboo forest, and can be found living close to villages (Collar & Robson, 2007).

BirdLife International consider the Moustached Laughingthrush to be a species of Least Concern, due to its large range and believed population size. The population is thought to be declining in size, although it has never been surveyed. The Moustached Laughingthrush is kept by aviculturists, but not in large numbers. ISIS (International Species Information System) shows that Waddesdon is the only public collection holding this species. In addition, there are a few pairs in private collections around the UK.

Waddesdon obtained an adult pair of Moustached Laughingthrush from Peter Moore in September 2008 and got a second pair in March 2009. The first pair is housed alone in an off-show aviary. The second pair, consisting of two 2008-bred birds, is on show to visitors in one of our main aviaries. Housed with the second pair is a pair of Mindanao Bleeding Hearts

Gallicolumba criniger which bred well in 2009, and a pair of Pekin Robins *Leiothrix lutea*. It is thought that the Pekin Robins were disturbed by the laughingthrushes and for that reason were not successful in their breeding attempt. The second pair of laughingthrushes made no attempt to breed in 2009.



Simon Matthews

Adult Moustached Laughingthrush.

The off-show aviary housing the first pair of laughingthrushes (see photo opposite), is a wooden framed structure measuring 2.8m x 5.3m (approx. 9ft x 17ft 3in), covered with $\frac{1}{2}$ in x 1in (13mm x 25mm) wire mesh and has a large, unheated shelter at one end. Approximately 60% of the entire structure is covered with Corolux. The aviary has several perches and is planted with bamboo, a young yew tree *Taxus* sp. and box shrubs *Buxus* sp.

In the wild the Moustached Laughingthrush consumes beetles and other insects, along with seeds, berries and fruit and, at Waddesdon, we try to duplicate the Moustached Laughingthrush's natural diet as closely as possible. All our laughingthrushes receive a similar diet, consisting of a fruit mix, an insectivorous mix and livefood. The fruit mix contains 11 different kinds of fresh fruit and T16 softbill pellets. The insectivorous mix is made from four different commercial softbill foods, to which we add grated carrot, hard-boiled egg, raisins and apple. The birds also receive two livefood feeds a day, as well as receiving insects on their main food dish. These consist mainly of mealworms, but they also get waxmoth larvae and crickets.

On March 18th 2009, the first pair of Moustached Laughingthrushes

housed in the off-show aviary was seen carrying nest material, so extra cover was provided in the form of yew tree branches, along with hay and coconut fibre and two small wicker nest baskets. One was placed quite low down in the young yew tree and the other was placed in some fresh yew cover at the back of the aviary. No further activity was noticed until March 30th, when the pair began to build a nest in the wicker basket low down in the young yew tree. This nest was never really lined or completed. Just over two weeks later on April 14th, a nest with two eggs in it was found in the box scrub on the left-hand side of the aviary. The laughingthrushes had built this nest entirely on their own about 6in (15cm) in from the outside of the scrub, using mainly coconut fibre. The nest was never measured but looked to be no more than 4in (10cm) in diameter. The pair began incubating the following day. The female may have laid another egg before then, so that there was a clutch of three eggs. The eggs of this laughingthrush are a wonderful turquoise colour with tiny brown spots. As that part of the aviary was not under cover, we gently slipped a sheet of Corolux onto the roof above the nest to protect it from the elements.



Simon Matthews

Off-show aviary in which the laughingthrushes bred.

On April 27th the pair began to carry livefood, suggesting that the incubation period was 12 days. The following day three healthy chicks were seen in the nest. The parents were provided with white mealworms (those that had recently shed their skin) and home-produced waxmoth larvae four to five times a day, beginning at 7.00am and ending at about 6.00pm (18.00hrs) each day. There were no concerns during the rearing of the chicks, which fledged on May 9th, i.e. after 12 days. All three reached independence a few weeks later.

The pair lined the nest made previously in the yew tree and on May 30th, there were two eggs in this nest. These hatched on June 12th, the following day though one of the chicks was found dead on the aviary floor. The female continued to care for the remaining chick which fledged on June 24th. During the second nesting the three previous fledglings remained in the aviary but were not observed assisting with the rearing of the fourth chick. Later in the breeding season two broken eggs were found on the aviary floor and an infertile egg was found in an old nest. This could, we think, have been due to the four fledglings continuing to be housed in the aviary with their parents, even though we did not see any aggression between any of the birds.

Lionel Currie, one of several private aviculturists holding this species in the UK, has an unrelated pair and was successful breeding this species in 2009. Lionel's pair began nest building in February and March and, in June, settled in the top of an old treefern. Two eggs were laid and the pair successfully hatched them and reared the chicks. As we did at Waddesdon, Lionel left the juveniles with the adult birds without any problems, except that in his case, the pair made no further attempt to breed in 2009.

If any members have experience of breeding this species or are currently keeping Moustached Laughingthrushes, I would be very interested in hearing from them. E-mail:Simon.Matthews@nationaltrust.org.uk

References

Collar, N. J. and Robson, C. 2007. Family Timaliidae (Babblers): In:del Hoyo, J., Elliot, A. and Christie, D. A. (Eds.) *Handbook of the Birds of the World* Vol.12 (Picathartes to Tits and Chickadees). Lynx Edicions, Barcelona.

BirdLife International. 2009. Species factsheet: *Garrulax cineraceus*. Downloaded from <http://www.birdlife.org> (04/01/2010).

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NEW SECRETARY AND TREASURER

Peter Stocks is the new Hon. Secretary and Treasurer of the Avicultural Society, replacing Paul Boulden who relinquished the position on June 30th. Peter's contact details can be found on the inside of the front cover of this issue.

THE BIRD COLLECTION AT TAIPEI ZOO

by Pierre de Chabannes

The island of Taiwan (formerly named Formosa) is well known amongst zoologists and birdwatchers for its amazing number of endemic species of animals, especially species of birds. Taiwan has a subtropical climate and is home to a wide array of birds, including both tropical and temperate species, as well as migrants from colder regions. There are lowland and mountain forests, as well as grasslands, swamps and other humid areas. I was in Taipei, capital city of Taiwan, from December 26th-December 29th 2009. The winter (like that of Hong Kong) is usually drier and colder, although the temperature stays mostly between 10°C-20°C (50°F-68°F). The summer is hot, very humid and often accompanied by tropical rains, storms and even typhoons. These factors help explain the incredible diversity of the avifauna found on Taiwan, which is such an attraction to bird enthusiasts like me.

During my stay in Taipei, I was fortunate enough to visit Taipei Zoo twice, on each occasion for a full day. The weather was mostly good, apart from a little rain, which lasted for about two hours during my second visit. During the highly enjoyable two days, I obtained a good overview of the zoo's very nice bird collection and also found time to do some birdwatching in the forested area of the park.

The zoo, located in hilly forest in the district of Muzha, a few metro stations away from the city centre, occupies an area of more than 160 hectares (approx. 395 acres). Despite the numerous enclosures, aviaries and buildings housing the impressive collection of animals, most of the original vegetation has been preserved and one third of the site remains completely wild, allowing many of the local bird species to live in complete freedom in the zoo grounds. Taipei Zoo is heavily involved in the protection of the island's endemic species of animals. Captive breeding programmes for species such as the Formosan Serow *Capricornis swinhoei*, Swinhoe's Pheasant *Lophura swinhoii* and Taiwan or Formosan Blue Magpie *Urocissa caerulea*, have been proposed by Taipei Zoo, which has been joined by other Taiwanese parks concerned about local species.

I have set out to give members an insight into what to expect should they be fortunate enough to visit Taipei Zoo's bird collection and how to maximize the time spent in this huge park in order to miss as little as possible. The zoo is divided into geographic zones and there are a few thematic buildings and exhibits. The bird collection is spread throughout the different sections, which are all well worth visiting, and one can appreciate the way the park has been well landscaped and the conservation efforts of the zoological team.



Pierre de Chabannes

The Taiwanese or Formosan subspecies of the Chinese Bamboo Partridge is darker coloured.

A standard visit begins at the Formosan animal area, which is especially interesting for foreign visitors. There are many rarities such as the Formosan Serows, Formosan Macaques *Macaca cyclopis* and deer and, one can get the first glimpse of the shy but beautiful Swinhoe's Pheasant. There is a male and three females in a dark aviary without, unfortunately, any vegetation. Taipei Zoo has chosen to concentrate its efforts on this species and leave the other zoos and bird gardens on the island to work with the Mikado Pheasant *Syrnaticus mikado*. In Europe, Swinhoe's Pheasant, although not particularly common, is more frequently seen in public bird collections than the Mikado Pheasant. In Taipei Zoo they live with one of two breeding groups of Formosan Bamboo Partridges *Bambusicola thoracica sonorivox*



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Taipei Zoo's last remaining Black-faced Spoonbill.

displayed in the Formosan animal area. This subspecies of the Chinese Bamboo Partridge, easily differentiated by its much darker general coloration, is not currently exhibited in any public collection in Europe.

The final two avian representatives living in this zone are the local subspecies of the Brown Wood Owl *Strix leptogrammica calligata*, a species of owl which is common in Asian zoos, and a lone specimen of the Formosan Crested Serpent-Eagle *Spilornis cheela hoyi*. This lovely species of raptor is to be seen in almost every large Asian zoo, from Indonesia to China, but most exhibit their own local subspecies and, as there are 21 different subspecies, it is difficult to establish successful a breeding programme.

Next comes a huge building housing nocturnal animals. It houses mostly mammals, along with a few birds. Most of the cages are quite outdated, space is strictly limited and there is no landscaping. This old building will though soon be totally renovated and transformed into a tropical greenhouse. Until then it is home to a small colony of Black-crowned Night Herons *Nycticorax n. nycticorax*, a Eurasian Eagle-Owl *Bubo bubo* of unknown origin (it may be one of the Chinese subspecies, perhaps *B. b. swinhoei* or *B.*

b. kiautschensis), an Eastern Grass Owl *Tyto longimembris pithecops* (lumped together sometimes with the African species and, as in this collection, listed as *T. capensis*), a pair of Formosan Collared Scops Owls *Otus lettia glabripes*, a single specimen of the rarely seen Tawny Fish Owl *Ketupa flavipes* and a group of scops owls identified as Indian Scops Owls *O. bakkamoena* but which are, I believe, Formosan Collared Scops Owls, not only because they look absolutely identical to the above pair, but also because *O. bakkamoena* is now generally considered to be restricted to the Indian subcontinent, which has led to several south-east Asian, Chinese and Taiwanese collections having to rename many of their scops owls.

After taking a quick look at the Ring-necked Parakeets *Psittacula krameri borealis* in the Children's Zoo, it was time to move on to the huge south-east Asian geographic zone. The landscaping of the enclosures is really interesting, as is the tropical forest atmosphere that has been created. Mostly mammals are exhibited in this zone, but there are also some birds, beginning with a pair of Sarus Cranes *G. a. antigone*, which is the most common species of crane kept in south-east Asian zoos. I think that the only specimen of Purple Swampphen (Gallinule) *Porphyrio porphyrio* I saw belongs to the subspecies *P. p. poliocephalus*, mostly because of the amount of grey on the head and the light blue underparts. The aviary, set-up to resemble a mangrove, has thick cover which renders observation of the birds difficult. A smaller aviary houses a breeding group of Nicobar Pigeons *Caloenas n. nicobarica*, a species which is now a common sight in collections across Asia, as well as in Europe. A huge aviary housing a pair of Great Hornbills *Buceros b. bicornis* and Asian Brush-tailed Porcupines *Atherurus macrourus* has been built in front of the elephant enclosure. At the end of the Asian zone is a lake surrounded by forest, which can be viewed from an observation deck on which are small pay-telescopes for visitors to watch the birds and try to spot local wild waterbirds. Black Swans *Cygnus atratus* were the most common species, but I also saw Chinese Pond Herons *Ardeola bacchus*, Cattle Egrets *Bubulcus ibis coromandus* and Little Egrets *Egretta g. garzetta*. Although the endangered Chinese Egret *E. eulophotes* no longer breeds on Taiwan, it continues to visit the island as a passage migrant and sometimes is a winter visitor. Its conspicuous bright yellow bill, coupled with its black legs and yellow feet, make it easily recognisable and I consider myself very lucky to have seen one by the lake even though, unfortunately, it was quite a distance away.

Two species of ratite, the Emu *Dromaius novaehollandiae* and Southern Cassowary *Casuarius casuarius*, are to be found living in the Australian zone. The origin and subspecific status of the latter is, unfortunately, not known, which is also true of almost all of those living in European and

mainland Asian zoos (although it should be noted that Clement (2007) did not recognise any subspecies of cassowary at all). Another ratite, the Ostrich *Struthio camelus*, is showcased in one of the enclosures in the African zone. With its light grey coloured neck and head, the male looked to me to belong to the southern subspecies *S. c. australis*.

An air-conditioned building at the end of the temperate animal area, houses two species of penguin, the African (Jackass) Penguin *Spheniscus demersus* and the impressive King Penguin *Aptenodytes patagonica*. Both species have been bred in the glass-surrounded enclosure, which has a deep, cold water pool.

The final section of the park is, for me, the best, for it is dedicated entirely to tropical birds. There is a large collection of waterbirds housed in large enclosures, each with a large pond. A tight mesh is stretched across the top of each enclosure to keep out wild birds which may be carrying viruses, including the dreaded avian flu, which is still common in most parts of eastern Asia. The waterbirds include the Asian subspecies of the Cattle Egret, which in breeding plumage is recognisable by the large amount of buff coloured feathering on its head, neck and back. There are also breeding groups of Lesser Flamingo *Phoeniconaias minor* and Chilean Flamingo *Phoenicopterus chilensis*. (A third species, the Greater Flamingo *P. roseus*, is showcased in a smaller enclosure by the main entrance to the park.) Other waterbirds include Pink-backed Pelicans *Pelecanus rufescens*, which are not uncommon in Asian zoos, Sarus Cranes and Common Moorhens *Gallinula c. chloropus*, the latter a bird more often seen living wild than in captivity in Europe and Asia.

Every large Asian zoo has at least one huge walk-in or walk-through aviary, and Taipei Zoo is no exception. In places the thick vegetation renders bird spotting quite difficult, but with a little patience, some of the rarer species can be seen. Visitors can look out over most of the area from an elevated walkway that follows an S-shaped path between the trees and close to the pond in the central area of the exhibit. Three smaller aviaries, high but not very wide, house a Wattled Crane *Bugeranus carunculatus*, a species almost never seen in Asian zoological collections, another pair of Sarus Cranes and a beautiful male Green Peafowl *Pavo m. muticus*.

The first part of this huge aviary is sparsely planted with rather short trees and there is minimum ground cover, allowing the terrestrial species to forage more efficiently over the rocky ground. There is a colony of Nicobar Pigeons and various different domestic mutations of the Rock Pigeon *Columba livia*. There are also a pair of Grey Crowned Cranes *Balearica r. regulorum*, Common and Victoria Crowned Pigeons *Goura cristata* and *G. victoria* respectively (of unidentified subspecies), both of which are very common in



Pierre de Chabannes

The Taiwan or Formosan Blue Magpie has yellow eyes and blue underparts.

Asian zoos, Pied Imperial Pigeons *Ducula b. bicolor* and starlings, the latter perched alongside each other up in the trees. The starlings include species such as the very common, large, Black-necked Starling *Gracupica (Sturnus) nigricollis* and the attractive Asian Pied Starling *G. (S.) contra jalla*. The

*Pierre de Chabannes*

The Hooded Crane is rarely seen in European collections.

last named being, I believe, the subspecies found on Sumatra, Java and Bali, which has more extensive bare orange skin around the eyes, a clear white belly and a black crown. The zoo also has at least one Black-winged Starling *Acridotheres (S.) melanopterus*, a species which is becoming increasingly scarce and is now classified as Endangered. It was trapped mainly for the local cage bird trade on the Indonesian islands of Java and Bali, which (with Lombok) it is native to and on which it is considered lucky to keep a white bird. Most individuals kept in captivity in Asia, including those at Taipei Zoo, are the progeny of different subspecies (not recognised by Clements

(2007)) which have been allowed to hybridise with each other and some are even hybrids with other closely related species. (In the *Avicultural Magazine* Vol.114, No. 3, pp. 97-100 (2008), Andrew Owen described the establishment of a captive breeding group of Black-winged Starlings at the Cikananga Wildlife Animal Rescue Centre on Java.)

A marshy area in the exhibit is occupied by a pair of Lilford's Cranes *G. g. lilfordi* and a mixed colony of Scarlet Ibis *Eudocimus ruber* and African Sacred Ibis *Threskiornis aethiopicus*, both of which are often seen in Asian collections. Eastern Asia is home to three threatened species of ibis, namely the Giant Ibis *Pseudibis gigantea*, White-shouldered Ibis *P. davisoni* and Japanese White Ibis *Nipponia nippon* but, unfortunately, almost no breeding programmes have been created for these, apart that is for the Japanese White Ibis, which is kept and bred in some Japanese and Chinese zoos, including the zoological gardens in Beijing. Most Asian zoos prefer to focus on non-native species such as the Straw-necked Ibis *T. spinicollis*, Scarlet Ibis, African Sacred Ibis and sometimes the Black-headed Ibis *T. melanocephalus*, a south-east Asian ibis which is not currently threatened.

The end of the walkway passes through a small area of denser vegetation frequented by two species of pheasant, the Silver Pheasant *L. nycthemera*, one of the commonest Galliformes in captivity in Asia, and the Greater Argus Pheasant *Argusianus a. argus*. Concealed amongst the vegetation was also a small group of the of the rarely kept Ashy Wood Pigeon *C. pulchricollis* and a pair of the equally rare Formosan Green Pigeon *Treron f. formosae*, which was not listed on the exhibit's identification panels.

Having come out of the huge walk-in aviary, visitors come to a row of tall and deep aviaries designed for storks and raptors. These are currently occupied by Eurasian White Storks *Ciconia ciconia*, African Marabou Storks *Leptoptilos crumeniferus*, a pair of Black Crowned Cranes *B. pavonina*, a beautiful specimen of the rare Mountain Hawk-Eagle *Spizaetus nipalensis orientalis*, the Japanese subspecies identifiable by its shorter crest and lighter coloured face, a group of Formosan Crested Serpent-Eagles and some Brahminy Kites *Haliastur i. indicus*. Most Asian zoos that keep storks - apart from some of those in Cambodia, Vietnam and Laos - tend not to show local endangered species such as the Greater Adjutant *L. dubius* and Oriental White Stork *C. boyciana*. The Oriental White Stork is though being bred in one or two Chinese zoos and some European collections.

A covered path later splits into two parallel pathways by the sides of which are two rows of beautifully landscaped aviaries for smaller tropical birds. There are species from Taiwan, south-east Asia, Africa and South America, in some instances mixed together and others kept in geographically themed exhibits. Amongst the most eye-catching are the Toco Toucans *Ramphastos*



Pierre de Chabannes

Covered walkway past aviaries housing toucans, turacos, the Red Bird-of-Paradise, Taiwan or Formosan Blue Magpie, Argus Pheasants and other tropical birds.

toco and Keel-billed Toucans *R. sulfuratus*, species which are not all that rare in big Asian bird collections, despite which they are almost never bred there. The Phasianidae family is represented by Greater Argus Pheasants, Silver Pheasants, of unknown origin, Swinhoe's Pheasants, the seldom seen Grey Junglefowl *Gallus sonnerati*, some Vieillot's Fireback Pheasants *L. ignita rufa*, the Blue Eared Pheasant *Crossoptilon auritum* and a female of the Taiwanese subspecies of the Ring-necked Pheasant *Phasianus colchicus formosanus*. A female Greater Curassow *Crax r. rubra* is displayed in a separate aviary. This is the only species of curassow seen in south Asian zoos. One of the most unusual exotic birds I saw in Taipei Zoo was (Buffon's) Green Turaco *Tauraco persa buffoni*, a bird which is hard to find in European zoos but is not rare in Asian collections.

Asian species housed in these aviaries include the Black-winged Starling, the endemic Taiwanese subspecies of the Large-billed Crow *Corvus macrorhynchus colonorum*, a male Red Bird-of-Paradise *Paradisaea rubra*, a group of Jungle Mynahs *A. fuscus*, a pair of the endemic Taiwanese subspecies of the Rufous or Rusty Laughingthrush *Garrulax p. poecilorhynchus* and the Taiwanese Common Magpie *Pica pica sericea*, a subspecies rarely if ever seen in zoological collections.

Lastly, and in my opinion the most interesting species housed in these aviaries, is the endemic and beautiful Taiwan or Formosan Blue Magpie, of which the zoo has a breeding group. Immature and unpaired birds assist

the breeding pairs raise their young. It has been shown that without their assistance, the parents are usually unable to successfully rear their chicks. Taipei Zoo is probably the only collection in the world in which this species can currently be seen living in a breeding group.

Next is a set of tall aviaries, each nicely landscaped and providing hiding places for a few larger species of birds. First to come into sight are some more Sarus Cranes, quickly followed by a pair of White-naped Cranes *G. vipio*, some beautiful Blue (Paradise or Stanley) Cranes *Anthropoides paradiseus*, a small group of Demoiselle Cranes *A. virgo* and a female Wattled Crane. Two species housed in the last aviaries captured my attention. The first was an old Black-faced Spoonbill *Platalea minor*, easily recognised by its entirely black bill and large area of exposed black skin on the forehead and around the eyes. This lone bird has lived in the zoo for a very long time and is the sole survivor of a large group of these spoonbills. Nowadays, this species is hardly ever seen or bred in Asian zoos and is almost never seen outside Asia, except at Weltvogelpark Walsrode in Germany, which has two females. The last aviary in this section houses a pair of Hooded Cranes *G. monacha*. This species breeds in several Chinese zoos and also in some American collections. In Europe, only two collections keep the Hooded Crane and only one of these, Weltvogelpark Walsrode, breeds it.

My visit to the Taipei Zoo bird collection ended with the parrots. There are a few aviaries, each of them nicely landscaped and with behavioural enrichment provided for these attractive and active birds. Most of the species on display are common in captivity. These include the Blue-and-yellow Macaw *Ara ararauna*, Green-winged Macaw *A. chloropterus*, Military Macaw *A. militaris*, Moluccan Cockatoo *Cacatus moluccensis*, Lesser Sulphur-crested Cockatoo *C. s. sulphurea*, White Cockatoo *C. alba*, Blue-fronted Amazon *Amazona aestiva* and Yellow-fronted Amazon *A. ochrocephala*. Of the others, the Palm Cockatoo *Probosciger aterrimus* remains quite common in Asian zoos, but is rarely bred, whereas the beautiful Hyacinth Macaw *Anodorhynchus hyacinthinus*, which is a common sight in Europe, although rarely bred, is very rare in Asian zoos.

That concludes my account of my visit to the bird collection at Taipei Zoo. I would encourage anyone visiting this zoo to see the entire collection, which is large and varied and includes animals from all around the world. In the grounds of the park there are many wild birds. Some of them, such as the Black-browed Barbet *Megalaima oorti nuchalis*, often remain hidden in the forested hills surrounding the zoo and can be difficult to see. Others, such as the Red Turtle Dove *Streptopelia tranquebarica humilis*, are more conspicuous and, depending on the time of the day, good views of them can be obtained. Great numbers of Red Turtle Doves roost on the trees in the

African area. Cattle Egrets and Chinese Turtle (Spotted or Necklaced) Doves *S. c. chinensis* are a common sight throughout the park and quite close views of them can often be obtained by the restaurants and other food outlets.

Acknowledgements

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THE SUCCESSFUL BREEDING OF THE BLUE-NECKED OR AZURE-HEADED TANAGER *Tangara cyanicollis* AT WELTVOGELPARK WALSRODE, GERMANY

by Simon Bruslund Jensen and Kerstin Kirchöfchel

The breeding of tanagers is a relatively rare occurrence and these birds are becoming more and more uncommon in aviculture. The main reason for the scarcity of good breeding results probably lies in the fact that not enough attention is given to their needs. Far too often tanagers are kept in mixed species groups, in which they amaze us with their vivid colours and get into quarrels, albeit usually not serious quarrels, with other birds. Tanagers, however, do best when they are kept on their own in pairs or with other bird groups that do not cause disturbances.

The Blue-necked Tanager, as it is most commonly known, or Azure-headed Tanager, which is perhaps a more suitable name, has regularly been kept at Weltvogelpark Walsrode since the park first opened. It was kept mostly in the Paradise Hall in pairs or small groups, either in aviaries or in the large free-flight section. It was frequently kept with other tanagers such as the Golden *T. arthus*, Paradise *T. chilensis* and Masked Crimson Tanager *Ramphocelus nigrogularis*. The Blue-necked or Azure-headed Tanager was previously bred in the park in 1994 and 2001.

It is one of the few species of tanager that has been studied in some detail. It has a fairly large distribution in western and central South America. It is found principally in open scrubland and on the edge of forest, but has also adapted well to secondary habitat and is frequently found in gardens. It is fairly abundant within its preferred habitat and is currently not under threat. It frequently lives in pairs, but single birds and family groups are also encountered. When feeding in fruiting trees it may gather with other species for a short while. Observations suggest that it eats mainly fruit but examination of its stomach contents have revealed that it also consumes insects, particularly caterpillars. The most reliable data on its breeding biology comes from captive birds. According to the literature available it usually has two eggs, which are incubated for about 15 days. The chicks remain in the nest for 20 days and after they fledge, the parents continue to feed them for a further three weeks.

Until recently few zoos kept small tanagers even though, thanks to their vivid colours, they are popular both with the general public and small softbill enthusiasts. Over the past few years, however, as smaller softbills have become increasingly difficult to obtain here in Europe, more zoos have begun to show a growing interest in keeping and breeding tanagers. Currently the

Blue-necked or Azure-headed Tanager is bred only sporadically in a few zoos and by some private breeders, in numbers far from sufficient to build up a sustainable captive population.

Our current pair, established in 2009, consists of an older male and a very young captive-bred female. The pair was given an aviary to itself, but during the first year did not show any signs of breeding behaviour. As is typical with tanagers, the two showed few obvious signs of affection, such as mutual preening, and it was very difficult to determine the quality of the pair bond. The two did, however, continually keep in contact with each other through subtle contact calls, which kept up our hopes that the two would become a successful breeding pair.

Earlier this year the pair was moved to an aviary in the Paradise Hall. Here the pair shared the 10m sq (approx. 1,076sq ft) accommodation with a pair of Pink-headed Fruit Doves *Ptilinopus porphyreus* and a pair of Harlequin Quail *Coturnix delegorguei*. In early April, only a few weeks after being transferred to this aviary, the pair began nest building. During this period the male was occasionally seen displaying when he would, for example, lower his wings and arch his back to show off his colours to the female for a few seconds at a time. We barely noticed his song. Apart from this, the pair paid little attention to each other; at best they would occasionally follow each other around the aviary.

The pair nested about 0.5m (approx. 1ft 8in) above the ground, in an open bamboo nesting basket 12cm (approx. 3½in) in diameter, placed in a small fig tree. The material used consisted mainly of different plant fibres, including coconut fibre and fine ariel rootlets from the fig trees. The pair also used small amounts of animal hair and moss. Only the female was observed incubating the eggs and scarcely ever left the nest. The pair was wary around the nesting tree and took a detour, so as not to reveal the location of the nest. It contained two eggs and after 14 days the parents became more nervous than usual. A few days later begging calls confirmed the presence of chicks in the nest. When they were approximately two weeks old the male began carrying nesting material and was apparently looking for a new nesting site. Just short of two weeks after they hatched, the two young tanagers fledged and during the first day remained on the ground. At this point the fruit doves suddenly and surprisingly became aggressive towards the newly-fledged young tanagers, to such an extent that the fruit doves had to be removed. Unfortunately, one of the young tanagers succumbed to the related stress, but within a few days the remaining young tanager was perched in the open, mostly waiting at a certain location to be fed. A week later the young tanager actively pursued the nearest parent, begging to be fed. During the nestling period both parents fed the chicks and were



João Marco Rosa

The male of the breeding pair.



João Marco Rosa

Two weeks after fledging the young tanager actively pursued its parents for food.



Simon Bruslund Jensen

**Juvenile awaiting the return of its parents
with food.**

themselves offered fresh food by the keepers, initially six times a day and, two weeks later, four times a day. After the young tanager fledged the male fed it slightly more frequently than the female.

After a few weeks the pair showed renewed interest in the original nesting site and refurbished the nest and shortly afterwards produced a second clutch of eggs. Again there were two eggs and both hatched. Shortly after this the young tanager from the first clutch was no longer being fed by the parents and was removed from the aviary well over four weeks after fledging. There was exactly 56 days between the first clutch and the second clutch.

The main diet consisted of various fruits, with banana and papaya being particular favourites. Versele Laga pelleted hill mynah diet soaked in fruit juices was readily taken by the parents and was also fed to the young. They were also given a high quality dry insect food that is mixed with small quantities of ground (minced) beef heart, the meat of day-old chicks and finely grated carrot. Livefood consists primarily of white-skinned mealworms that are still soft and easily digestible. Water seems to be particularly important, as they are frequently observed drinking and bathing, often on wet leaves.

The most recent edition of the Foreign Bird Federation Breeding Register of Birds Bred in the UK under Controlled Conditions, covering the period 2005-2008, lists five of these tanagers as having been bred in the UK in 2005, one in 2006, five in 2007 and three in 2008 -Ed.

THE WHITE-NAPED CRANE *Grus vipio*

by Derek Gibson

Introduction

While maybe not as striking as the Red-crowned Crane *G. japonensis* and lacking the flamboyance of the Black and Grey Crowned Cranes *Balearica pavonina* and *B. regulorum* respectively, and though not continuously drawing attention to itself by its loud raucous calls, the White-naped Crane is nonetheless a fascinating gem of a bird. It stands 120cm-130cm (approx. 3ft 11in-4ft 3in) tall and has red facial skin, surrounding an intensely orange eye, and white feathering on the back of the neck extending up onto the crown; the face and foreneck are black. The overall body plumage is subtle shades of grey and the wing colour ranges from white to dark grey. The red legs flush with colour when the bird is in breeding condition. Males tend to be slightly larger than females. As with other species of crane, the White-naped is omnivorous, feeding on small insects, seeds, roots and all manner of wetland plants.

Distribution

It frequents cultivated fields of rice, marshes and estuaries, as well as lowland steppes and mixed forest steppe areas (Meine & Archibald, 1996). Its breeding grounds are in Mongolia, north-east China and areas of south-east Russia and its wintering grounds are in North and South Korea, eastern Siberia, eastern China and southern Japan. The population numbers some 4,900-5,300 individuals. In common with other species, it has suffered as a result of habitat destruction and the encroachment of civilization. The Second World War and the Korean War in particular, damaged many of its stopover points and wintering areas.

Together with other habitat changes, for instance changes in agricultural practices, there is illegal shooting, which occurred on at least seven occasions in the spring of 2005 in the Spassky District of eastern Siberia (von Treunfels, 2006), which makes the fact that the White-naped Crane is protected by law a bit of a sham. All have contributed to the decline of the population throughout its range. The White-naped Crane faces additional threats on its wintering grounds. The wintering populations of White-naped and Hooded Cranes *G. monachus* are highly concentrated, increasing the risk of an outbreak of disease (Meine & Archibald, 1996). The artificial feeding area at Izumi, Japan and the 103,000 hectares (approx. 255,000 acres) Dagurian Nature Reserve on the Uldza River in the Mongolian province of Dornod (part of the Mongolian-Chinese nature sanctuary that is home to

the largest colony of White-naped Cranes) offers some protection, as does the Khinganski Nature Reserve in Russia, where chicks are raised from eggs provided by American zoos, to help bolster the population (Wikipedia, 2008). The White-naped Crane is classified as Vulnerable by the IUCN and is on CITES Appendix 1.

Housing

Exmoor Zoo has had White-naped Cranes since 2001, when a breeding pair was received from The Tropical Bird Gardens, Rode, which has now closed. Both the male and female are pinioned and were considered to be adults when they arrived. They were placed in a paddock-style enclosure measuring approximately 35m x 18m (115ft x 60ft) which is enclosed by a 2.5m (approx. 8ft) high perimeter fence. A house/shelter is positioned at the top of the enclosure by the keeper's main gate, so that feeding and watering can be carried out with the minimum of disturbance to the birds. The house/shelter provides the cranes with protection against the more unpleasant weather that occasionally engulfs North Devon. A freshwater stream runs lengthways through the enclosure, the bottom half of which is very wet and has many all-year-round naturally-occurring pools. The grass is left uncut and the native plant species are allowed to grow unhindered. These include Cow Parsley *Anthriscus sylvestris*, Flag Iris *Iris pseudacorus*, Stinging Nettle *Urtica dioica*, White Clover *Trifolium repens*, Red Clover *T. pratense*, Sow-thistle *Silybum* sp., Greater Plantain *Plantago lanceolata* and Devil's-bit Scabious *Succisa pratensis*. In the top half of the enclosure the grass is shorter (the lawnmower is dusted off twice a year just before and just after the breeding season) and it is planted with various plants and there is a wonderful Tree-of-Heaven *Ailanthus altissima*.

Diet

The adult birds are fed twice a day, at 9.00am and 3.30pm (15.30hrs). The first feed consists of 400g of mixed corn, 400g of waterfowl maintenance pellets, two slices of wholemeal bread that has been crumbled and four day-old chicks dusted with a vitamin supplement. Once a week 400g of oystershell grit is added to the food. At the second feed each bird gets a chick and a fish and the morning feed tray is removed to discourage vermin. Twice a year, in March and October, the birds are routinely wormed. We use Panacur 2.5% oral suspension.

The cranes spend a large part of each day probing with their bills into the soft earth and into the flowering heads of various plants. Exmoor Zoo is blessed with a seasonal abundance of a wide variety of invertebrates, which coincide with the crane's rearing season. These include crane fly



Derek Gibson

Adult at nest with two eggs.

Tipulidae sp., May Bug or Cockchafer *Melolontha melolontha*, Common Green Grasshopper *Omocestus viridulus*, thousands of Arachnids and over 80 species of moths, all of which feed and breed in the zoo's paddocks, as do numerous other species of Lepidoptera (Devon Moth Group, 2006).

Breeding

It seems that the White-naped Crane was first bred in the UK at Woburn Park in 1908 (Coles, 1986). The first sign of a potentially good breeding season, is when the birds begin to call in unison. The female seems to initiate the display and utters two calls for each of the male's calls, with the male always lifting his wings up over his back and the female keeping her wings folded at her side (Johnsgard, 1983). Again, as with other cranes, the White-

*Derek Gibson***Three day old chick.**

naped engages in complex dance displays, which consist of synchronized dips, bows, head swings, wing spreading, leaps and flaps. Bits of grass and twigs and even sods of earth are picked up and tossed into the air. They certainly seem to enjoy themselves.

Our first egg was laid on February 23rd 2002, but unfortunately proved to be clear. We had to wait until May 31st 2003 before our first chick was hatched, which unfortunately succumbed after only one day (see below).

Our breeding record is as follows:

2003 One chick being reared by the parents failed to survive. It was found dead in the enclosure and is thought to have died due to one or both parents having been inexperienced and having failed to care for it correctly.

2004 Two young hand-reared and one parent-reared.

2005 No young.

2006 Three hand-reared, one of which did not survive, due to a protruding yolk sac.

2007 Five were hand-reared but the one being raised by the parents died due to heatstroke.

2008 Two hand-reared.

2009 Three chicks were hatched and reared.

We make every effort to let the parents rear their young. However, being a zoo situated in the countryside, we have a major problem in that we attract a number of unwelcome nocturnal guests. In 2008, we lost our female, who was killed on the nest and the two eggs rolled away, when she was almost certainly, we believe, attacked by a very aggressive Stoat *Mustela erminea*.

When the first chick begins to hatch, the second egg is removed and artificially incubated and the chick is hand-reared, leaving both parents to care for just a single chick. The dedication of both the male and female to the chick is an amazing sight to behold. It is constantly fed insects and we have witnessed the parents with the chick in between them, first being fed by one parent and then the other. Not surprisingly, parent-reared young seem to grow at an amazing rate. Again, both parents seem to be in continual contact with the young crane. A series of low frequency rumbles are emitted and, if the young one disappears in the long grass, much louder whistles are emitted. Of course, when danger threatens, both parents mantle and begin to shout and call, and will even rush at the intruder, standing as tall as they can and with their wings out, indicating that the intruder's presence is not welcome.

Over the years various species have shared the enclosure with the White-naped Cranes. These have included Australian Shelduck *Tadorna tadornoides*, Cape Barren or Cereopsis Geese *Cereopsis novaehollandiae*, Bar-headed Geese *Anser indicus* and Parma Wallaby *Macropus parma*. Apart from the male Cape Barren or Cereopsis Goose, a bird far too aggressive for his own good, none of the others interfered with the cranes. At four to five months of age, the young White-naped Cranes are placed together in a communal crane enclosure measuring 35m x 26m (approx. 115ft x 85ft) with a netting roof, which at its highest point is 5m (approx. 16ft) high. Housed with them in the enclosure have been European *G. grus*, Demoiselle *Anthropoides virgo*, Sarus *G. antigone* and East African Grey Crowned Cranes. The birds are of assorted ages and are both male and female. The young cranes are always placed in the enclosure in twos, in order to avoid out-and-out aggression. All have, to date, mixed together with little or no trouble. Within a few days it is apparent that they know which species they belong to, and birds of the same species stick together. An exception was a young male (DNA sexed) White-naped Crane, which would not be tolerated

by either of the other two young White-naped Cranes, one of which was his sibling, or by any of the other young cranes.

Nesting

Observations of White-naped Crane nests in the wild, indicate that they are flat structures made of dry grass and situated on an elevation amongst reeds or marsh (Soothill & Soothill, 1982). Both the male and female incubate the eggs. Here at Exmoor Zoo, the cranes nest either on an elevated small island in the middle of the pond or at the edge of it. Again, as in the wild, the nest is made from various reeds and grasses and, again, as in the wild, incubation duties are shared by the male and female. Interestingly, the pair never re-use an old nest site.

Incubation

A clutch of two eggs is laid each season and, of course, if the eggs are removed, the female will lay again. Nine is the most eggs laid in a season by a female here at Exmoor Zoo. Eggs that are taken to be artificially incubated are carefully measured. The average measurement is 88.61mm x 60.35mm. They are mottled brown on a cream base. Any dirt is removed with a moist cloth and the eggs are then placed in an incubator set at 37.5°C (99.5°F) and 50%-55% relative humidity.

The eggs are candled at 10 days to determine that they are fertile and not again until the external pipping has begun. They are then transferred to a hatcher set at 37.2°C (99°F) and as high a humidity as possible. If an egg takes longer than 48 hours to hatch, following the initial pip, we intervene. Luckily this has happened only once and, in that particular case, roughly 2cm (¾in) of shell around the pip was gently removed and the membrane was moistened. Cheeping and purring sounds were made by the keeper and the chick responded and, luckily, hatched successfully.

Chick management

Upon hatching the chicks are weighed and then transferred to a brooder set at 32°C (89.6°F). The humidity is kept as low as possible to allow the chicks to dry out and recover from the stresses of hatching. All of the White-naped Crane chicks have, with one exception, hatched between 7.00am-9.00am. The exception was the chick that had to be helped from the egg.

When chicks need to be pinioned, it is done within the first 24 hours and it is very important that they are kept calm. After they have been pinioned they are placed back in the quiet of the brooder.

The chicks spend the first 24 hours in the brooder. No food is given to them during this time, thus letting them absorb the yolk sac. Boiled water that

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Juvenile White-naped Cranes aged between six and seven months.

has been allowed to cool, with a water soluble probiotic added, is offered at regular intervals. The floor of the brooder is covered with a non-slip rubber material, so that the chicks can get a good foothold and this helps prevent problems with splayed legs. A small, cuddly toy, is given to act a 'mum' which they can cuddle-up to.

Fig. 1. Frequency of egg laying according to season.

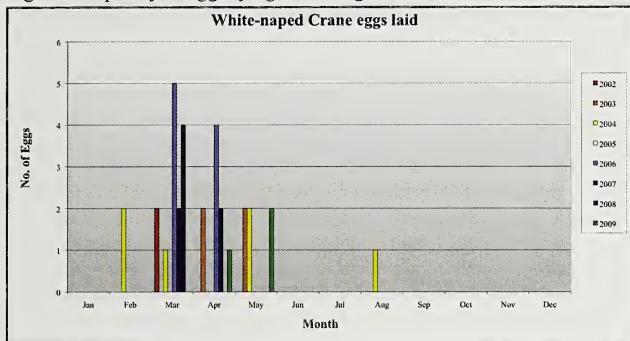


Fig. 2. Weight gains in grams over the first 14 days.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Cree 2004	116	113	109	114	120	129	138	144	163	197	229	257	264	278
Pawnee 2004	119	109	115	127	136	152	168	184	196	222	237	249	263	279
Apache 2006	116	112	110	117	122	136	145	149	171	209	221	237	257	270
Crow 2006	115	105	117	124	130	151	172	196	223	242	275	292	319	347
Shawnee 2006	129	108	105	120	113									
Abenaki 2007	129	108	115	121	128	135	144	151	161	177	186	200	211	232
Sauk 2007	126	110	119	127	136	141	149	157	166	181	199	217	229	241
Ioway 2007	131	121	125	132	139	149	155	162	170	179	188	198	215	230
Beothuk 2007	129	112	115	126	133	141	156	160	170	181	201	213	229	242
Choctaw 2007	127	117	120	129	141	152	166	183	189	222	240	256	260	273
Navajo 2008	126	112	112	119	127	138	153	169	193	219	250	281	314	336
Beaver 2008	110	98	96	110	119	132	148	160	180	199	210	224	243	269
23 May 2009	110	99	95	104	117	130	140	160	171	194	220	241	274	281
23 June 2009	110	97	97	100	111	123	143	169	178	190	221	235	276	310
25 June 2009	117	109	99	108	121	129	134	150	171	187	200	212	239	259

The chicks are weighed the following morning and on average have lost 10g-12g. When handling the chicks, we place their body in the palm of our hand and place the other hand gently over the chick's back; the legs are held between the fingers to afford an added degree of control. This method is used each day when we weigh the chicks during the first 14 days. After this the chicks are too large to be handled safely in this way and from then onwards are carried (like adults) under the arm, facing backwards, with the legs 'folded'.

The young cranes are then moved to the rearing pen, which measures 1m x 0.6m x 0.5m (approx. 3ft 3in x 2ft x 1ft 8in). At one end is a heat source set at 30°C (86°F). Over the course of the following two weeks the

temperature is lowered gradually until it reaches room temperature. Again, it is important to have a non-slip floor covering. We use carpet tiles, as we find these easy to keep clean. A small glass bowl 5cm deep x 8cm wide (approx. 2in deep x 3½in wide) contains water, with a calcium supplement added to it. We use a glass bowl because the livefood that is dropped into it is clearly visible to the chick and encourages it to eat and at the same time take a good gulp of water. Each young crane is given a companion. A day old Helmeted Guineafowl chick *Numida meleagris* seems to make a very good companion. Other birds we have tried, such as domestic chickens and bantams are, of course, good but a guineafowl chick tends to be as 'bright as a button' and soon begins to eat and drink, thus encouraging the young crane to do likewise. We have tried keeping two siblings together, but because of aggression, we have had to intervene and separate them at as young as three days old.

Food is provided in bowls placed as far apart as possible to encourage the young cranes to take exercise. They are offered an insectivorous mix and get crushed and soaked Diet A and chick crumbs. There is also a scattering of food cast onto the floor. Livefood fed to the young cranes consists of waxworm larvae *Achroia grisella*, small crickets *Gpyllus assimillis* and mealworms *Tenebrio monitor*. The livefood, which has first been submerged in water, is held with tweezers and presented to the chicks. The first feed tends to consist of just two waxmoth larvae, then throughout the day the quantity of food is increased gradually and the chicks receive seven to eight feeds a day with the last feed, using tweezers, happening at 6.00pm-6.30pm (18.00hrs-18.30hrs). Normally the young cranes get the hang of feeding themselves quite quickly and, as early as two days old, are picking up food from the floor, but continue to be fed by tweezers until day 10 when each chick, along with its companion, is eating sufficient food on its own. The food bowls are refilled throughout the day and livefood is scattered in the pens at regular intervals, so that the young cranes have access to food whenever they require it.

By the end of the first day the chicks are usually able to struggle to their feet and are beginning to take their first rather hesitant steps. Exercise is so important: here at Exmoor Zoo the chicks are encouraged to take exercise by being walked in our children's playground that backs onto the zoo's Incubation and Rearing Station. When the chicks are walked when the zoo is open, quite an audience gathers (after all who can resist a young crane?) and it provides keepers with an ideal opportunity to chat to the public about cranes - not just the White-naped but also the other six species we keep here in North Devon. The young cranes seem to enjoy this time out of the rearing pen and continually probe in the long grass, looking for insects and having

a good old stretch of their wings.

Legs problems can occur. We have had a couple of problems in the past, with slight bowing of the leg just below the ankle joint. In 2008 we had a youngster with this very problem. He was just as mobile as the female and did not seem to be unduly hampered by it. It was only noticeable when he walked towards us head-on.

A useful recent addition to our crane rearing facility is a small elevated pool which provides us with another means of exercising our young cranes. It measures 117cm x 60cm (approx. 3ft 10in x 2ft) and when filled with water, the maximum depth is 22cm (approx. 8½in) and the minimum depth is 10cm (approx. 4in).

Young cranes grow extremely quickly and by the time they are three weeks old have outgrown the first of the rearing pens. They are then moved to larger pens measuring approximately 180cm x 70cm (6ft x 2ft 3in). They remain in these until they are eight to 10 weeks old, at which time they are moved to larger enclosures and remain in these until they are ready to be housed with other young cranes in our communal crane enclosure.

References

- Coles, D. 1986. *First Breeding Records for Birds Reared to Independence under Controlled Conditions in the United Kingdom*. Published by the author. Website: www.dcbooks.co.uk
- Johnsgard, P. A. 1991. *Crane Music*. University of Nebraska Press.
- Meine, C. D. and Archibald, G. W. (eds.) 1996. *The Cranes: Status survey and conservation action plan*. IUCN, Gland, Switzerland and Cambridge, UK.
- von Treunfels, C-A. 2006. *The Magic of Cranes*. Abrams, New York.

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GREY PARROT REPORT II

SOME CONSERVATION ASPECTS CONCERNING THE AFRICAN GREY PARROT *Psittacus erithacus* IN KAKAMEGA FOREST, KENYA: ASSESSMENT OF THE EFFECTS OF TRADE AND HABITAT DESTRUCTION

by Ireene Madindou and Ronald Mulwa

Summary

The main focus of the second part of this project¹ was to assess the involvement, attitudes and awareness of the local community concerning the trade in Grey Parrots, as well as developing a monitoring protocol for Grey Parrot population trends and habitat quality.

Market surveys were conducted in the communities living in the border town of Busia and its environs. A questionnaire was distributed informally so as not to arouse suspicions. An illustration of the Grey Parrot taken from a field guide was shown to those who were interviewed. Government officials at the Kenya-Uganda border were also interviewed, as well as bicycle and taxi operators and brokers. Extensive surveys were conducted of preferred Grey Parrot habitat in Kakamega Forest during the course of searching for the birds. The habitat surrounding the sites visited was surveyed to document any disturbance caused by human activities.

Introduction

The African Grey Parrot occurs in Kakamega Forest, Kenya and is among 30 bird species that are confined (in Kenya) to this forest. Kakamega Forest is a mid-altitude tropical rainforest, the easternmost outlier of the Congo Basin forests. Kakamega's avifauna is unique not only nationally, but continentally. It is a complex and fragmented forest, one that has been under resource utilization pressure, from inside and outside, for many years. Continuing forest fragmentation and destruction appear to have taken their toll on the avifauna (Bennun & Njoroge, 1999) and this has affected one of the world's most traded birds, the Grey Parrot.

Based on the most recent assessment (in 1994) by BirdLife International of globally threatened parrots, 86 (26%) of the 332 Psittacidae in the world are at risk of extinction, with a further 36 Near Threatened. It is a proportion unmatched in any other large family of birds and testifies to the vulnerability of parrots both in environmental terms and as an economic resource. The birds suffer from the combination of habitat destruction (www.birdlife.org.ke)

¹ Copies of the first report are available from Steph Tyler. E-mail: conservation@africanbirdclub.org

and trapping for trade, which are responsible for the exceptionally high number of threatened members of the family (del Hoyo et al. 1997).

The Grey Parrot has been heavily traded: from 1994-2003 over 359,000 wild-caught individuals were reportedly exported from range states. It is one of the most popular avian pets in Europe, the USA and the Middle East, due to its longevity and unparalleled ability to mimic human speech and other sounds. Demand for wild birds is also increasing in China and, the increased presence of Chinese businesses in central Africa (particularly in mining, oil and logging), may increase the illegal export of this species. Whilst there has been some domestic demand within range states, the main impact seems to be due to international trade, probably owing to the high value of this species. Habitat loss is also thought to be having a significant impact throughout West and East Africa. Proposed conservation measures include the monitoring of wild populations, ascertaining the extent of trade and thus implementing appropriate trade restrictions (www.birdlife.org.ke). The main objectives of this study were to develop a monitoring protocol for Grey Parrot population trends, habitat quality and trade activities and to assess the involvement, attitude and awareness among the local community concerning the trade in Grey Parrots.

Objectives

The main focuses of the second part of this project were:

1. To assess the involvement, attitudes and awareness among the local community concerning the trade in Grey Parrots.
2. To assess the status of rescued pet Grey Parrots in Kenya.
3. To survey populations of the Grey Parrot and identify existing pockets of suitable habitat in Kakamega Forest.
4. To develop a monitoring protocol for Grey Parrot population trends and habitat quality.

Methodology

Informal questionnaires were distributed among members of the communities living in the border town of Busia and its environs. Interviewees included former trappers of lovebirds *Agapornis* sp. and quail *Coturnix* sp., members of the local site support group, retired civil servants and immigration officials at the Kenya-Uganda border, as well as bicycle and taxi operators and brokers. The illustration of the Grey Parrot from *Birds of Kenya and Northern Tanzania* (Zimmermann et al. 1996) was used to help respondents recognise the Grey Parrot.

Status of rescued Grey Parrots

Essentially our visit to the Kenya Society for the Protection and Care of Animals (KSPCA) was to establish how the parrots came to be in its care and

to consult the staff on the best ways to rehabilitate the parrots and habituate them back into their original environment - the forest.

Field surveys

Extensive field surveys were conducted in search of Grey Parrots in their preferred habitats and at sites where they had been sighted earlier. These were the *Agrocarpus fraxinifolia* plantation behind the Rondo Retreat Centre, Liranda Hill and by the Shitiya River. The particular tree species preferred by the parrots were scanned for their presence and whenever they were sighted their activities were recorded. On December 25th 2007 the team camped near the Yala River in order to ascertain the roosting place of the Grey Parrots. As parrots must drink water at least once a day (Collar et al. 1997) attention was focused on the Shitiya and Yala Rivers. The status of the habitat and levels of disturbance at spots where parrots were sighted was documented based on the detailed monitoring form and photographs were taken.

Monitoring

The monitoring of the Grey Parrot will be incorporated into an already ongoing detailed monitoring of birds and habitat at Kakamega Forest IBA (Important Bird Area). This scheme is being implemented by the Site Support Group (KEEP), which will incorporate protocols for monitoring the Grey Parrot along the same and additional transects and seasons.

Results

Bird trappers confirmed that during the 1970s and 1980s, they used to trap birds to sell to customers mainly of Asian origin. They trapped mostly lovebirds and the Brown Parrot *Poicephalus meyeri*. They also used to trap Common Quail *C. coturnix* for food and to sell to other members of the community. This, however, no longer occurs, as they claim that changes in weather patterns have caused a downward trend in the number of Common Quail. They reported that they had never trapped the Grey Parrot.

Members of the local community who have crossed the Kenya-Uganda border several times, attested to the fact that illegal crossing points exist that are seldom patrolled by customs officials. At these points, goods are smuggled across the border and may even pass through inspection units undetected. They did not commit themselves as to whether birds are ever smuggled across the border. They were though quite knowledgeable about members of the parrot family found in Western Kenya. The Red-headed Lovebird *A. pullarius* and Brown Parrot are quite abundant in patches of forest and wooded farmland around the border town of Busia, and are not shy. Older members of the community confirmed that the Grey Parrot was abundant several years ago and attributed its decline to changes which may

have led to the destruction of its preferred habitat and the species of trees in which it fed.

The research team met with the local administration police, who confirmed that birds are trapped and are sold in the local market. They had, however, never seen Grey Parrots offered for sale. Customs officials reported that they only inspect vehicles crossing the border to ensure that passengers have the correct documents and the relevant taxes have been paid. They do not carry out rigorous inspections because they would not suspect anyone would try to smuggle animals or plants across the border. They believe this only happens at airports. Immigration officials at the border said they lack sufficient knowledge not just of birds, but also of other animals and plants as well. Customs officials appreciated the information we provided them with and promised to pay more attention to passenger's luggage and be on the look-out for the possible illegal trafficking of birds and other animals.

Field surveys

The Grey Parrot's preferred tree species were recorded, as well as the parrot's activities. The habitat around these spots was also assessed. At the plantation behind the Rondo Retreat Centre, four Grey Parrots were seen flying in from the direction of the Yala River. They settled on 30m (approx. 98ft) high *Agrocarpus flaxinifolia* which were flowering and were observed licking the nectar and were making whistling and squeaking sounds. There was a lot of deadwood in the plantation, but not much human activity or disturbance was observed. After camping at the Yala River on December 25th 2007, early the following morning we saw five Grey Parrots flying from the tall trees across the swollen Yala River and heading towards Liranda Hill. Human activities leading to the deterioration of Grey Parrot habitat were documented and photographed.

Monitoring

Kakamega Environmental Education Programme (KEEP) members have incorporated monitoring of the Grey Parrot alongside other globally threatened species they look out for in Kakamega Forest (e.g. Chapin's Flycatcher *Muscicapa lendu* and Turner's Eremomela *Eremomela turneri*) during their biannual detailed IBA monitoring of species and habitat. During KEEP'S dry season monitoring in February 2008, members failed to spot any Grey Parrots. Monitoring will continue to be carried out twice a year but in future more sites will be monitored. Data collected during the current study has been included in the monitoring database for Kakamega and forms the initial baseline information on the probable population status of the Grey Parrot in this forest, against which future census results will be able to be compared.

Discussion

The fact that the Grey Parrots occur in a group in which the number of individuals varies has raised a number of questions. For instance, during the first phase, three birds were seen on one day and two the following day at the same location (Rondo Retreat Centre Road into the forest). During the second phase of the project a group of seven parrots was seen in December 2007 at Rondo Retreat, but in March 2008 there were only four birds in the group. This could mean that the group of seven seen in December 2007 had later split into smaller groups of four and three birds, due possibly to a change in food abundance or as a result of breeding activity. Or could the seven have been just a loose association of two different families? Apart from the single plantation of *Agrocarpus flaxinifolia* at Rondo Retreat Centre, none of the other sites sampled has a similar monoculture that has been recorded as a preferred site for the Grey Parrot. Other areas where the birds were recorded, included sites with particular species such as *Maesopsis eminii* or *Ficus sur*, but only when they were fruiting.

Because of the distances the parrots covered it was impossible to accurately determine their home range. The food trees were scattered and the birds had to fly all over the forest, stopping at suitable foraging locations and watering points. Nectar-feeding demands wide-ranging behaviour, as the flowering times of the trees varies and the birds have to move around a good deal in search of new sources of food (Collar et al. 1997).

The habitat at sites sampled was noted as satisfactory - in size at least. Apart from the *Agrocarpus* plantation at the retreat centre, other sites exhibited signs of disturbance. Hence places where the Grey Parrot was seen regularly in the past are now devoid of the species due to logging and especially the removal of the huge tall trees, in which it prefers to roost.

The vegetation on Liranda Hill was only just recovering from forest fires in late 2007 that consumed virtually everything. The site is visited mainly by thatching grass collectors, who may have started the fires accidentally while preparing meals. The fires burnt key fruit-bearing tree species, such as *Maesa lanceolata*, *Albizia gumifera* and *Syzygium* spp., known to be visited by feeding Grey Parrots. Charcoal kilns at various stages of production were seen. Thin smoke indicates a freshly-lit kiln while thick smoke with particles of dust in it is a sign that a kiln is being dismantled. Six smoking sites were counted in the proximity of approximately 1 km (0.6 miles). Such disturbances can make these sensitive birds fly further in search of food.

It was quite apparent that immigration officials at the border lacked adequate information concerning the trade in wild birds and the passage of animals to and fro across the border, and who were the dealers. The local community knew about the trapping and selling of birds. This, they

confirmed happens, but said that those involved are extremely careful and it would not be easy to penetrate cartels during a casual investigation or to conduct interviews.

Rescued Grey Parrots

Rehabilitating rescued Grey Parrots at the KSPCA centre takes one-and-a-half years. Apparently 250 baby parrots (including Grey Parrots) had been impounded at Nairobi's Jomo Kenyatta International Airport on dates unclear to KSPCA personnel. They were taken to the KSPCA and only 18 of the Grey Parrots survived. Fifteen of the 18 died later and only three of the original group survived. These were taken to aviaries built on Rubondo Island on Lake Victoria. They too died. Most of them had names and were either pet birds that had escaped or had been abandoned by their owners when they moved.

When the ornithology research team visited the KSPCA offices on August 12th 2007, seven Grey Parrots and a Red-fronted Parrot *P. guielmi* were noted. All of these had different case histories. Pishu, a male, had flown into Wilson Airport at Langata, and staff had called the KSPCA and arranged for him to be collected. It was not possible to establish where he had come from. Kaka, a female, had been abandoned in a house when the owner left Kenya to go abroad. Neighbours heard the bird's cries and on investigation found the emaciated looking parrot, which they took to the KSPCA. Sinbad, a dark male from the Congo, almost grabbed a banana from the hand of Dr Sophie Walker in Karen (another suburb of Nairobi) and subsequently followed her home. He had probably escaped. A male, named David, was found in the Giraffe Centre in Nairobi. The staff confirmed that there used to be three but two had escaped and only David was found. Nobody knew how the birds came to the Giraffe Centre. Luka, a female, was released by her owners who did not want her anymore. Another bird, named Penny, was released by its owner who was leaving Kenya. It was taken to the KSPCA after a neighbour noticed the distressed bird perched for many hours near its former home. Mohammed, a male, had an unclear history, as did another male named Monsieur, that spoke French. Both had been found flying around in Nairobi.

Dr Sophie Walker a Veterinary Surgeon who is involved in rehabilitating various birds and other animals, identified them as caged birds because they exhibited a number of traits, such as eating sunflower seed, green maize and bananas. Keeping the birds presents a number of challenges, one of which is the fact that they appear agitated because of the lack of space in the small aviary in which they are confined. We concluded that they cannot be released in the surrounding area because of the absence of the species' preferred feeding trees and the fact that they have never learned how to

search for food for themselves.

Conclusions and recommendations

Further research is needed to establish the size of the Grey Parrot population in Kakamega Forest. So far only seven birds have been recorded. Attaching radio transmitters/transponders to the birds would enable more detailed studies to be made of their movements. There is a need for further studies of their foraging habits and to ascertain their dietary requirements and the various different trees they prefer for finding nectar, fruits and in which to roost. An extensive search for flowering trees may be required and observations made along streams and in riverine forest. This will need to be carried out with the help of KEEP.

Our initial data has been included in the monitoring database for Kakamega and forms the initial baseline information on the possible population status of the Grey Parrot in this forest. The continued gathering of data on the number of Grey Parrots over a long period of time will provide important data on population trends.

The KSPCA centre at Karen is actively involved in the treatment and rehabilitation of Grey Parrots rescued from various sources, but there is no suitable habitat close by where the birds can be released on an experimental basis. Therefore, we recommend the establishment of a pilot rehabilitation programme for the Grey Parrot within Kakamega Forest, where the birds can be trained to recognise wild fruits, become independent of humans and eventually be released in the forest. There will need to be consultations with relevant custodians such as the Kenya Wildlife Service, Kenya Forest Service, National Museums of Kenya and Kenya Society for the Protection and Care of Animals (KSPCA) over matters such as fund raising to finance the venture which will, hopefully, ensure the continuity of the Grey Parrot population in the wild in Kenya. The research team and Dr Walker have begun consultations on plans to raise money for an aviary which could be built at Isecheno. With proper funding, this could be set-up for the rehabilitation of the rescued parrots and members of KEEP could be trained how to handle the birds. Radio telemetry could be used to monitor the movements of the released birds and ascertain whether or not they bond with the wild population in Kakamega Forest.

Experts at the KSPCA are concerned that most Grey Parrot owners feed their birds on sunflower seed which is not good for their health. There is, they feel, the need to educate parrot owners on the need to provide their birds with a more suitable diet. Owners could also be offered advice on the general welfare of their birds.

Our work has created an increased awareness among the local community, provincial administration and police and customs officials, of the trade in

wild birds. Consultations are underway to determine the best way forward to make various government authorities aware of the wild bird trade and especially to be on the lookout for species listed in the CITES appendices for Kenya.

Acknowledgements

We wish to express our sincere gratitude to the African Bird Club for its financial support and patience, as we strove to complete our research amidst the political difficulties that there were in Kenya at the time. Many thanks also to members of KEEP, especially site intern Leonard Muhanga and Wilberforce Okeka a founder member of KEEP, for their support and hard work throughout the survey. Members were particularly helpful in conducting the interviews with the local community and at the Kenya-Uganda border. We also wish to thank the Ornithology Section of the National Museums of Kenya for providing field equipment.

References

- Bennun, L. A. and Njoroge, P. 1999. *Important Bird Areas of Kenya*. East Africa Natural History Society.
- BirdLife International. 2007. Species Factsheet: *Psittacus erithacus*. Downloaded from <http://www.birdlife.org> (19/09/2007).
- Collar, N. J. 1997. Family Psittacidae (Parrots). In: del Hoyo, J., Elliot, A. and Sargatal, J. (eds.) *Handbook of the Birds of the World Vol.4 (Sandgrouse to Cuckoos)*. Lynx Edicions, Barcelona.
- del Hoyo, J., Elliot, A. and Sargatal, J. (eds.) 1997. *Handbook of the Birds of the World Vol.4 (Sandgrouse to Cuckoos)*. Lynx Edicions, Barcelona.
- Zimmerman, D. A., Turner, D. A. and Pearson, D. J. 1996. *Birds of Kenya and Northern Tanzania*. Russel Friedman, Cape Town.

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HARD TO BELIEVE

It is hard to believe that the nominate subspecies of the White-cheeked Turaco *Tauraco l. leucotis*, the most commonly kept and frequently bred turaco, had not been kept at London Zoo prior to 1963. It was first bred in the UK the following year. It seems that up until then the southern subspecies, Donaldson Smith's Turaco *T. l. donaldsoni*, which has the tips of the crest feathers red instead of dull bluish, was the better known of the two. One lived in the Bird House at London Zoo from 1945-1963, and before that had been in Spedan Lewis's collection at Leckford, so was likely to have been at least 25 years old when it died in 1963.

NEWS & VIEWS

GREATER EMPHASIS ON SOUTH AMERICAN BIRDS

The Superb Fruit Dove *Ptilinopus superb* and the Black-naped Fruit Dove *P. melanospila* have been added to the bird collection at Chester Zoo. Over the next few years, the zoo plans to increase the numbers of some of its South American species. It has recently acquired a pair of Green Jays *Cyanocorax yncas* from Barcelona Zoo in Spain, which will be housed with the zoo's Red-billed Curassows *Crax blumenbachii*. Dr Roger Wilkinson, the zoo's Head of Field Conservation and Research, travelled recently to South America with Phil McGowan, Director of the World Pheasant Association (WPA), to plan future support for the ongoing conservation of this threatened species in the Atlantic rainforest of eastern Brazil.

The zoo has increased the number of hornbill projects it supports, one of which is the Mabula Ground Hornbill Project in South Africa, which is attempting to re-establish the Southern Ground Hornbill *Bucorvus leadbeateri* in areas where it used to live. It also continues to provide financial and technical support to the Mauritius Wildlife Foundation (MWF). Mauritius Olive White-eyes *Zosterops chloronothos* translocated to the Ile aux Aigrettes have bred for the first time and over 140 Echo Parakeet chicks *Psittacula echo* fledged in 2008/2009 - a record total. The zoo is also continuing to support work with the Critically Endangered Blue-crowned Laughingthrush *Dryonastes courtoisi* in China and is supporting a project which plans to conduct a survey in western Yunnan to try to find a species of laughingthrush caught on camera, which is thought to be new to science.

* * *

FAR FEWER THAN STATED

Rosemay Low has written to point out that the Cape Parrot *Poicephalus robustus* population numbers only an estimated 1,000-1,500 birds, not "1,000-15,000" birds, as stated in News & Views Vol.116, No.1, p.48 (2010). The estimate of up to "15,000" birds, that I quoted from a report in the *Bulletin of the African Bird Club* Vol.17, No.1, pp.7-8, March 2010, was a error. At the time I suspected it might be incorrect, but it was not until I received Rosemary's e-mail, that it became obvious how the error had occurred.

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SERINUS BREEDERS' GROUP

A Special Interest Group has been formed for those who keep birds of the genus *Serinus*. It is called the European Society of Serinus Breeders (ESSB) and like other Special Interest Groups, aims to put keepers and breeders of these birds in touch with each other to exchange information and birds in order to maximise breeding results and help establish self-sustaining captive-breeding populations of as many species as possible, before it is too late. It has already established contacts with enthusiasts in the Netherlands, Belgium, France and Germany and has a database with details of which species respective members keep and breed. It is keen to establish contacts with other keepers and breeders in these countries and elsewhere. It invites fellow enthusiasts to visit its website - www.Serinus-Society.eu - and register an interest in these species and help ensure that this initiative succeeds.



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